

# A Comparison of Searching Functionality of a VuFind Catalogue Implementation and the Traditional Catalogue

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## ABSTRACT

As of spring semester 2010, Georgia Southern University began using a VuFind implementation as the default access to the library catalogue on the library Web page while maintaining a secondary link to the traditional Voyager “classic” catalogue. VuFind is an open-source product that has been adopted and adapted by all the state universities and colleges in the state of Georgia. For approximately ten years, Georgia libraries have used Voyager as their catalogue, and it remains available to users as the “classic” search option. This report examines the local VuFind implementation compared to the more traditional Voyager implementation, emphasizing the differences in the searching capabilities of each.

## INTRODUCTION

Since 2009, VuFind, an open-source product, has been in development as an alternative to the traditional Voyager catalogue used by the libraries in the University System of Georgia for more than ten years. The Georgia implementation is named GIL-Find after the consortium of academic libraries in Georgia, known as the GALILEO Interconnected Libraries, or GIL. GALILEO is Georgia’s electronic library, which includes a collection of databases available to students from kindergarten through college as well as to public libraries, and many resources are free to all Georgia citizens. GIL was a natural extension of GALILEO, linking all of the university system libraries with a common system for creating a union catalogue and sharing resources among the 35 institutions comprising the consortium (University Systems of Georgia, n.d.).

VuFind, the open-source software on which GIL-Find is based, was developed at Villa Nova University (University Systems of Georgia, n.d.). Because

VuFind is free and open source, it can be modified by institutions choosing to adopt it. Thus, almost every library using VuFind as the basis for their library catalogue has an implementation that has been customized by local developers. Here, GIL-Find will be discussed as the Georgia implementation of VuFind.

GIL-Find remains in development even now for the Georgia libraries, with enhancements and improvements regularly added to the original implementation. A very significant recent development is the conversion of the union catalogue from the "classic" format to GIL-Find as the primary or default interface for users. Fortunately, all GIL-Find development is occurring at the state level so that each individual library does not have to adapt the software locally. In fact, it would be unlikely for more than a few of the largest universities in the Georgia system to have the staffing or the expertise to adapt an open-source product such as VuFind at the local level.

Georgia Southern was one of the pilot institutions for the GIL-Find project, and a librarian from Georgia Southern served on the implementation committee. The committee represented the thirty-five institutions in the Georgia System and comprised approximately fifteen librarians from various institutions as well as a state-level technical expert. All of the Georgia institutions except one have identical implementations of GIL-Find. Georgia Tech is the exception, having utilized local resources to enhance the Georgia Tech version of GIL-Find.

After a year of beta testing, Georgia Southern University decided to implement GIL-Find as the default interface to the library catalogue in spring semester 2011, while retaining a link to the Voyager "classic" catalogue. This report examines differences between the "classic" and GIL-Find interfaces and provides examples of differences in search results. Whether the "classic" or GIL-Find interface is truly an improvement over the other may be largely a matter of opinion depending on one's experiences with each interface. However, there are significant differences between the two that should be explored before libraries decide to give up some traditional catalogue functionalities. The ideal situation for libraries is to provide one catalogue interface with all of the functions needed by all users, since the proliferation of search boxes on the library Web site often causes additional confusion for library users (Breeding, 2010, p. 33).

The GIL-Find interface utilizes color, book cover images, and a large variety of icons for a pleasing overall look and feel. However, GIL-Find does lack some of the more in-depth search capabilities of the classic catalogue. For example, the GIL-Find implementation does not utilize cross-references in the authority files. This brings forward a number of questions that will be addressed here. What impact will this have for library users? Will keyword searching make up for the lack of cross references? GIL-Find does not provide left-anchored searching for specific titles or

other search terms. Does keyword searching make up for the loss of the left-anchored search?

One obvious advantage of GIL-Find over the classic catalogue is that the searcher experiences a Google-like search environment. Each search almost always returns "something," and the searcher is not left empty-handed as so often occurs with the more precise "classic" catalogue. In the case of the "classic" catalogue, if the searcher does not choose the right option for a search, a message may display that there are no results or no items found. Students, our most frequent searchers, often do not know how to select the search options best suited for their tasks. For them, GIL-Find results in a more rewarding experience regardless of whether they construct the best search or even if they do not find the best materials that the library has to offer them. For librarians, the results in GIL-find can seem overwhelming in terms of sheer numbers. For students used to large numbers of result sets, these numbers are not daunting, according to librarian observations, because they often look at the first screen or so and ignore the remaining results.

### THE CLASSIC CATALOGUE

Very few people who work in a library or regularly use a library would argue that the traditional online library catalogue needs no improvement. The interface and functions have clearly not kept up to date with contemporary Web-based search tools. The lure of the single search box via Google is impossible to deny. Many studies indicate that library users first turn to Google while searching. In fact, many library users also search sites like Amazon before turning to the library catalogue to verify availability and location of library materials. It is essential that libraries seek to provide search tools that meet student expectations to ensure that premier library resources are utilized. Library personnel cannot sit back and feel satisfied with antiquated software and search tools and expect today's users to be content.

Even with the improvements GIL-Find brings, retaining access to the "classic" catalogue is critical for several reasons, among them, the more precise levels of searching it supports and the fact that GIL-Find lacks the same range of basic functionalities. GIL-Find does not provide access to online reserves or to materials in the automated retrieval system; thus, users are redirected to the "classic" catalogue in order to access online reserves and to make requests for stored materials. Making these functions available in GIL-Find is on the enhancement request list, so hopefully this is a temporary solution. However, it is not ideal for the catalogue user to have to go back and forth between the two very different catalogue interfaces in order to complete these routine functions. Another reason for retaining a link to the "classic" catalogue is the fact that more precise searching is best supported by the "classic" version. The Web page

explaining GIL-Find attempts to alert users: "GIL-Find sits on top of the Voyager software. It is not a replacement for the catalogue. Indeed, many users will want to continue to use Classic WebVoyage." The Web page includes a chart for users explaining the basic differences between the two interfaces (University Systems of Georgia, n.d.).

The user interface for the "classic" catalogue, WebVoyage, is neither intuitive nor visually appealing. The WebVoyage interface is more typical of second-generation online catalogues. The functions are similar to, though more extensive than, those of the card catalogue. Although there are search limiters, such as title or author, these must be decided ahead of time or before a search is conducted. Most users "search by keyword," which is the default search option in WebVoyage. Unless a catalogue searcher knows how to search in the "classic" version, he/she is very likely to get no results. For example, if a student types a title in a "subject" box or misspells a word, the student will most likely get a response of "No results located." When that happens, the student is likely to give up and rely on Google, where there is no need for correct spelling and there are always results no matter what search terms are entered.

### VUFIND/GIL-FIND

GIL-Find is colorful and visually appealing and includes all the bells and whistles ascribed to next-generation catalogues, including the much sought after single search box. Keywords can be entered in a single search box in any order. Results are returned along with *did you mean?* suggestions for term choices. Results can be limited by a wide variety of facets or delimiters. Many entries link to full text documents or electronic books. There are icons to indicate material formats and provide links to more detailed information. Many entries in GIL-Find contain a table of contents, an image of the book cover, a review, user tags, and a list of similar items. The user can export citations, email search results, and even tag or review library resources in GIL-Find. The "classic" catalogue has very few such features.

Most of the literature related to VuFind focuses on the user experience and the technical issues related to next-generation catalogues rather than on the searching capability of this software. One reason for this is the current emphasis on the "discovery" of library resources rather than on the support of exact searching. While "discovery" of expensive and underutilized library resources is important, librarians must also be careful not to give up important search capabilities. GIL-Find does an excellent job of providing a "discovery" experience. Library users get results with almost any search, and the vast variety of resources available to them is clearly displayed. However, in GIL-Find, users are limited to two main types of catalogue searches: an exact search for a known item or an exploratory topic search (Sierra, Ryan, & Wust, 2007).

With GIL-Find, exploratory search can be an excellent experience, but the known item search is often less than satisfactory. In fact, next-generation catalogues such as GIL-Find are much more useful as discovery tools than they are for known item searches. This is because in GIL-Find, the user typically conducts a broad search and limits or browses the results afterward. This forces users to refine their search results in order to locate what they want rather than having the ability to easily limit the initial search to a known item (Emanuel & Kern, 2009). This “discovery” experience exposes the user to a wealth of library resources. However, it can be a problem when the individual wants a specific resource and wants it quickly. This is central to the library principle of “saving the reader’s time,” and in this instance the discovery environment often works counter to this principle.

The single search box for GIL-Find is located on the library home page, front and center, with a tab noting “Books and More.” Just below the search box on the library home page, a note appears with a link to the “classic” catalogue stating, “Didn’t find what you need? Try searching Classic GIL instead.” For millennial searchers, the keyword-only search may seem quite similar to a Google search. GIL-Find does provide a drop down menu in the search box so that users can select from a variety of fields to focus their search. The user may search all fields at once or can instead narrow to specific fields including Title, Title plus Subject, Journal title, Author, Subject, Call number, SuDoc number, ISBN, ISSN, and Tag. However, these options can be misleading, as all searches result in a de facto keyword search within the selected field. The limitations of this approach become especially evident with a title search. Most skilled library users might assume that a title search would result in an exact title search. In GIL-Find, the results from a title search display a combination of formats and may include the exact title along with a number of works about that title or works with similar titles.

For many titles, a known item title search is not a big problem since the title usually appears within the first few results or at least on the first page. Take, for example, the title “Gone with the Wind.” By searching for the title in quotation marks in the title field, the user only gets twenty-eight results, and the actual book is the third title in the list. The first title is a book about the movie, and the second title is a history about the “book, the movie, and the legend.” This discovery experience might lead a user to additional information that he or she would not have considered, and that is the epitome of the discovery experience.

In fact, the more unique a title, the easier it is to locate in GIL-Find. One of the best features of a discovery catalogue—the fact that it rarely leaves the user stranded with no results—can turn into a problem feature for users searching for a known item. If the title does not show up on the first page, does that mean the library does not have the title, or is it buried

further down in the list? It can be very difficult to know for sure whether the library owns a certain title if searching by title alone (Emanuel & Kern, 2009). How long does one look before giving up? Preferring to be self-sufficient, the user is not likely to ask a librarian for help in this situation. Perhaps the user will search Google or Amazon for the book title and then return to do an author/title keyword combination search which will be effective. A library user should not have to search an outside site such as Google or Amazon to have success in finding a title in a library catalogue. However, the GIL-Find title search works well for presenting a list of titles owned by a library so long as the user does not mind the inclusion of works about a given title as well as other similarly worded titles. Millennial Google generation users typically do not mind this kind of variability in a result set. Many Georgia students have expressed appreciation for not only locating a title but also links to more information about the title in one search.

One aspect of discovery catalogue searching that remains controversial is whether authority files and controlled vocabularies are necessary in next-generation catalogues. All searches in GIL-Find are keyword searches. Subject headings are searched for keyword matches. In GIL-Find, subject headings are “clickable,” meaning that once a record is retrieved, the user can click on a subject heading and retrieve all records to which that subject heading has been assigned. The “clickable” subject headings feature allows the collocation of records by subject so that the user retrieves a comprehensive list of holdings for a particular subject. Clicking or selecting subjects in Gil-Find is consistent with the use of facets in that a broad search is conducted and then focused after the initial search. The Library of Congress Subject Headings can actually be broken down so that each element of a subject heading is a hyperlink to a search (Denton & Coysh, 2011). What is missing is that the user cannot browse the subject headings list as they can in the “classic” catalogue. No user will enter detailed Library of Congress subject headings, nor do librarians expect such searching behavior, but browsing a thesaurus and clicking on subject headings can be an extremely useful approach to increase the precision of search results (Denton & Coysh, 2011). Georgia Tech has added browsing by subject as a feature by including a clickable alphabetical list of headings as part of the local implementation of GIL-Find.

Authority file cross-references are not currently utilized in GIL-Find, although this is a planned enhancement (Houser, 2009). It may not always be readily apparent why authority cross-references are important in the search process because cross-references tend to be an invisible part of the search process. One question presented to a reference librarian at Georgia Southern clearly illustrates the difference cross-references can make. The user asked why none of the twenty-five dissertations about bread mold appear in GIL-Find although they do appear in the “classic” catalogue.

Most individuals do not check both catalogue versions, and so would never notice such a discrepancy. In many cases, some of these dissertations appear through keyword searches. The dissertations did not show up in GIL-Find because the librarian searched for the terms “bread mold,” which is a “see reference” from the scientific terms *neurospora crassa*. Only the most advanced searcher or scientist would search using this term; however, with the established authority system integrated into searching, the user does not have to know the established scientific Library of Congress subject heading. When the librarian typed “bread mold” into the “classic” catalogue, he was immediately given a link and a note to “see *neurospora crassa*.” By simply clicking on the “see reference,” the twenty-five dissertations appeared. By contrast, when the librarian typed “bread mold” into the search box in GIL-Find, whether selecting “search all fields” or “subject,” only one result appeared. The one title appearing in the GIL-Find search actually had nothing to do with bread mold but contained both words in a different context.

In order to make the dissertations about bread mold more visible in GIL-Find, “bread mold” was added as an uncontrolled index term in the MACHine Readable Cataloguing (MARC) 653 field for each title, and a tag “bread mold” was added as well. This solution works well for these particular dissertations, but it is difficult to know how many similar situations exist. The well-constructed authority files and cross-references should better utilized in the new discovery catalogues, or the risk of losing access to resources is high. To alleviate some of these concerns, current cataloguing practice for dissertations at Georgia Southern includes the addition of 653 fields or uncontrolled index terms. In fact, the authors of the dissertations are asked to submit such terms themselves.

Another example of a gap created by the lack of cross-references is revealed by a search for the term “car accidents.” This search returns a list of fourteen items. In actuality, each item is a government document about train accidents with a subject heading of “tank car accidents.” The “see reference” in the “classic” catalogue takes the user to the heading “traffic accidents” with many results. There is no direction, by cross-reference or otherwise, to lead the user to find better search terms in GIL-Find. A bit of experimentation with terminology in “search all fields” mode can lead to better results, but why not take advantage of the cross-reference structure that already exists? Will our users continue experimenting with alternate terms, or will they instead assume that the library has no holdings on their search topic? It is a small step to imagine how many such gaps exist—since many thousands of “see reference”s exist in the authority file. The sheer numbers of results returned tend to hide this problem since all searches are keyword searches. In the new discovery interfaces, cross-references do not have to look the same as they do in the classic catalogue. In fact, cross-

references might work very well if they were implemented as something that works as facets currently do.

Author searches work fairly well in GIL-Find, as users are presented with a list of author names from which to refine a search. Cross-references can be helpful as in cases with authors who have pen names such as Samuel Clemens/Mark Twain. But, the case for authors is less critical, since author names will almost certainly appear as keywords. An author search may result in other names presented in the result set, as the list may also include authors of works about the author. GIL-Find typically makes differences among choices clear enough unless an author has a common name. To further assist with disambiguation, some author results also include a photograph and brief biography harvested from Wikipedia, as well as a list of related subjects extracted from the records by and about the author. Although author search functions well as a discovery experience for the user, this is an instance in which the “classic” catalogue provides a far more intuitive display because it includes a unique browse list for individual authors (Gorman, 2008). Library catalogues need to make it easy for the user to search for an author name without worrying about needing to enter the exact form (last name, first name) and should retain the useful browse list for individual authors with a link to the authorized name form so that a library user can be confident of the result set without having to do a number of different searches. Call number and SuDoc searches are also useful GIL-Find features. One desirable enhancement would be a feature that presents call numbers as clickable links—a feature already provided by the “classic” catalogue. Clickable call numbers permit virtual browsing of items collocated by classification number, an important feature for a library such as Georgia Southern, which has relocated a large portion of its legacy collection to an automated storage retrieval system. Georgia Tech has implemented call number browse in their local implementation of GIL-Find.

The functionality of GIL-Find has improved remarkably since implementation of the Beta version in April of 2009. Although a few minor glitches remain, these result from a failure to fully utilize the data in the MARC record or from cataloguing errors. GIL-Find does readily bring to light errors and improperly coded records in a way that is not the case in the “classic” catalogue (Denton & Coysh, 2011). The identification of problems and errors allows libraries to identify and correct cataloguing problems in legacy records. For example, one prevalent problem revealed by GIL-FIND has been the prevalence of inconsistent coding in the 006 and 007 MARC fields, causing the wrong icon to display for format type in some records.

Many local librarians hope that Resource Description and Access (RDA) might correct some of the display issues that arise occasionally in



GIL-Find. Unfortunately, these issues have nothing to do with the cataloguing code but are instead a matter of properly utilizing information already existing in the MARC record. For example, names in MARC 700 fields are always displayed as “other authors.” Many names in 700 fields are not added authors but instead have other roles such as performer or thesis advisor. At Georgia Southern, this display issue first became apparent because thesis advisors show up as “other authors,” although they are coded correctly in the MARC record. This will not change with RDA. It will only change when system developers are able to tweak and fine-tune the GIL-Find display to fully and properly utilize all of the aspects of the MARC record.

## CONCLUSION

In terms of user experience, GIL-Find is a marked improvement over the “classic” WebVoyage. When GIL-Find was demonstrated to the entire library staff, one staff member commented that “It looks like we’ve traded our old Chevrolet in for a new Lexus.” The GIL-Find interface better fits current expectations of library users who do not even remember when the Internet did not exist and who use the term “Google” as a verb. It is important that libraries meet user expectations and utilize available technology to ensure full use of library resources. It is common knowledge that today’s students prefer to be self-sufficient, and it is essential that libraries make search tools that students can use independently. Most users access the library from their homes or may use online resources so they never need come to campus to visit the library.

The likelihood that users will actually search GIL-Find and experience success is much greater than in the “classic” catalogue. This is true in part because GIL-Find seems familiar to those who rely on Google and similar Web interfaces. The fact that the “classic catalogue” has more advanced searching features is irrelevant if the interface turns users away because searchers frequently meet a dead end. However, the library profession must be careful not to leave behind what is good about our catalogues, but rather find ways to combine the best of what we have with new technology (Gorman, 2008). More fine-tuning of relevance ranking and the use of weighting mechanisms for subject indexing are just a few of the possibilities for increasing the granular access to information and improving browsing functions (Zhang, Smith, Twidale, & Huang Gao, 2011). If library catalogues can provide a Google-like experience and retain many of the “behind the scenes” search aspects of traditional catalogues, the combined features may well result in the creation of truly powerful discovery and search tools (Mercun & Zumer, 2008, p. 259).

Georgia Southern is not standing still with the addition of GIL-Find as a discovery interface. We are now in the process of evaluating four major discovery services including WorldCat Local, Summon, Primo, and EB-

SCO Discovery Service. The latest discovery services extend the discovery experience to include journal articles as well as resources outside of the library to give the user a truly Google-like experience. Taking the next step in "discovery" is essential since our current catalogues reflect only a small portion of the universe of information needed by library users (Calhoun, 2006, p. 26). Increased access to scholarly information and an interface that meets the information seeking behaviors of our users are essential elements in keeping the library and its resources relevant to the library users of today.

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